

CLAIMS:

1. Measurement apparatus for measuring at least one parameter of an object or area, the measurement apparatus comprising one or more imaging and display devices for creating a three-dimensional map and displaying an image of said object or area, mapping apparatus for mapping a virtual shape onto said image and substantially matching said shape to said object or area, the measurement apparatus being adapted to determine from said image at least one parameter of said object or area, said parameter comprising at least one of a length, surface area or volume of said object or area.
2. Measurement apparatus according to claim 1, comprising selection apparatus for marking or otherwise selecting the object or area to be measured within an image, including outline definition apparatus for defining an outline of the shape of said object or area.
3. Measurement apparatus according to claim 2, comprising matching apparatus for creating a virtual shape which substantially matches said outline and for mapping said virtual shape onto said image of said object or area.
4. Measurement apparatus according to claim 1, including alteration apparatus including a function for altering one or more of the size, angle or pitch of said virtual shape so as to substantially match it to said image of said object or area.

5. Measurement apparatus according to claim 4, wherein said alteration apparatus is adapted such that the function of altering said size, angle and/or pitch of said virtual shape is user-controllable.
- 5 6. Measurement apparatus according to claim 1, including one or more calculation devices for calculating and displaying an estimate of materials required to cover said object or area, said one or more calculation devices preferably being arranged to take into account
10 standard material values and/or quantities when calculating said estimate.
7. A method of measuring an object or area, the method comprising the steps of creating a three-dimensional map and displaying an image of an object or area to be
15 measured, mapping a virtual shape onto said image, substantially matching said virtual shape to said object or area being measured, and determining at least one of a length, surface area or volume of said object or area.
- 20 8. A method according to claim 7, further comprising the step of marking or otherwise selecting said object or area by defining an outline of the shape of said object or area.
9. A method according to claim 8, further comprising the
25 step of creating a virtual shape which substantially matches said outline and mapping said virtual shape onto said image of said object or area being measured.

10. A method according to any one of claims 7 to 9, further comprising the step of altering one or more of the size, angle or pitch of said virtual shape so as to substantially match it to said image of said object or area being measured.
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11. Measurement apparatus comprising one or more image capture devices for capturing at least one image of said object or area, display apparatus for displaying in a two-dimensional image space an image of said object or area, the apparatus being arranged to create a three-dimensional map of said object or area from at least one image captured by said one or more image capture devices, the measurement apparatus further comprising shape matching apparatus for matching a shape to said image of said object or area as displayed in said two-dimensional image space, and calculation apparatus for determining from said displayed image at least one of a length, surface-area or volume of said object or area.
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12. Measurement apparatus according to claim 11, comprising image manipulation apparatus for creating one or more two-dimensional images of said object or area from said three-dimensional map.
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13. Measurement apparatus according to claim 11, comprising image manipulation apparatus for creating a two-dimensional image of said object or area from a selected or selectable perspective from said three dimensional map.
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14. Measurement apparatus according to claim 13, wherein said shape matching apparatus is adapted to match a shape to said two-dimensional image from the selected perspective.

5 15. Apparatus for estimating or calculating a quantity of chosen material required to cover an object or area, the apparatus comprising one or more imaging devices for creating a three-dimensional map of said object or area, shape matching apparatus for matching a shape to
10 said object or area, measurement apparatus for determining at least one of a length, surface area or volume of said object or area, and calculation apparatus for estimating or calculating from said matched shape, the quantity of chosen material required
15 to cover said object or area.